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ABSTRACT

The goal of this study was to describe the potential educational opportunities that lie in self-directed age-mixed interactions among children and adolescents. A qualitative analysis was used to generate ideas about goals and benefits of such interactions. The setting for the study was Sudbury Valley School (Massachusetts), a private school with an age-mixed environment. The reactive participation method was used in observing children over a 3-year period and collecting 375 vignettes of age-mixed interactions. Vignettes were organized by activity, age difference, age group classification, individual, and distinct activity aspects. Patterns in each activity were identified and a written summary generated. The main findings emerging from the analysis were: (1) when children asked older children for help, help was usually given; (2) when older children offered unsolicited help, help was often rejected; (3) children modified their mutual activities to include younger ones while also making the activity challenging for themselves; (4) children responded positively to younger children's requests for help; (5) children more often praised and supported than discouraged younger children; (6) children talked to each other about how to treat younger children; (7) there were few instances of children bullying younger children; (8) some children regularly associated with older or younger friends and companions; and (9) some children had a cross-age friend despite regularly associating with same-age peers. The two main ideas generated by this study were that under conditions of free choice, children's learning is implicit; their explicit goal is to have fun. Also, under free choice conditions, children assert responsibility for younger children. (Contains eight references.) (KDFB)

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# The Educational Opportunities that Lie in Self-Directed Age-Mixed Play Among Children and Adolescents

poster presentation by

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When children of different ages come together to play a game, one would expect the older child to be more competent and skilled at the game, and so should easily win. The question, then, is: Why do children of different ages choose to come together to play if they know that the older child will win? The goal of this study was to gather data to describe the potential educational opportunities that lie in self-directed age-mixed interactions among children and adolescents.

Several prominent psychologists, such as Melvin Konner (1972), Lev Vygotsky (1978), and Barbara Rogoff (1990), proposed that age mixing serves educative functions, and that the functions it serves may differ form those served by children's interactions with same-age peers or adults. However, while there is theoretical support for the role that age mixing may play in children's development, this topic has been relatively unexplored through research. For example, I conducted a review of the research published in the journals Child Development and Developmental Psychology from January, 1991 to December, 1996, noting articles which examined either children's same-age and mixed-age interactions. There were 146 studies examining children's same-age interactions, but only 4 articles which examined children's mixed-age interactions.

The research which has been conducted on children's age-mixed interactions does, however, suggest a number of educative functions. Prior research has examined children's age-mixed complementary (or asymmetrical) relationships, in which children have different skills, abilities, and power. The complementary relationships studied include: (a) teacher-learner, (b) leader-follower, and (c) nurturer-nurturant. Other research has examined children's reciprocal (or symmetrical) age-mixed relationships in which children, although differing in age, have similar skills, abilities, and power. These relationships studied include: (a) friendships, (b) those in which children have equivalent intellectual skills, and (c) those in which children have equivalent social skills.

However, this research has been conducted in adult-directed situations in which adults have dictated children's partners, roles, tasks, and goals. For example, researchers examining children's age-mixed teaching interactions (a) choose children's partners, typically placing unfamiliar children together, (b) choose the children's role, placing the older child as teacher and the younger child as learner, (c) choose the task, whether it is a classification task as used by Ellis and Rogoff (1982) or school material such as used in tutoring studies (see Cohen, Kulik, & Kulik, 1982), and (d) choose the goal of the interaction, which is that the older child is supposed to impart knowledge to the younger child.

Consequently, there is a need to observe children's age-mixed interactions in a setting in which they can freely chose their own partners and activities. Observing children in such a setting may lead to different ideas about the goals and benefits of their age-mixed interactions. For example, in a child's freely chosen interaction, we may see the younger child as an active seeker of knowledge, rather than as a passive recipient as in the adult-directed settings.

The goal of this study was to describe the kinds of age-mixed interactions that children have in an age-mixed environment in which they can freely choose their own partners and activities, and then, through a qualitative analysis, to generate some ideas about the goals and benefits of such interactions.

## Method

### Setting

This study was conducted at the Sudbury Valley School (SVS), a private school founded in 1968 and organized as a participatory democracy. At the time of my observations, between 130-160 students aged 4-19 were enrolled. The special significance of SVS for this study is that it is an age-mixed environment which does not segregate children by age, sex, or ability. Instead, children can freely choose their own partners and activities, and they have an ample supply of same- and cross-age children from whom to choose.

Gray and Feldman's (1997) study examining the extent of age mixing at SVS can provide a quantitative assessment for the present qualitative study. Gray and Feldman systematically toured the public areas of SVS 13 times, noting which children were interacting with each other and the activities in which these children were engaged. After eliminating all groups in which siblings or adults were present, Gray and Feldman collected information on 130 groups. They reported that 57% of all groups observed encompassed an age difference of 24 months (they, like Ellis, Rogoff, & Cromer, 1981, used a 24 month age difference as a determinant of mixed-age interactions), 25% of all groups observed encompassed an age difference of 48 months, and 7% of all groups observed encompassed an age difference of 72 months or more.

### Qualitative Methodology

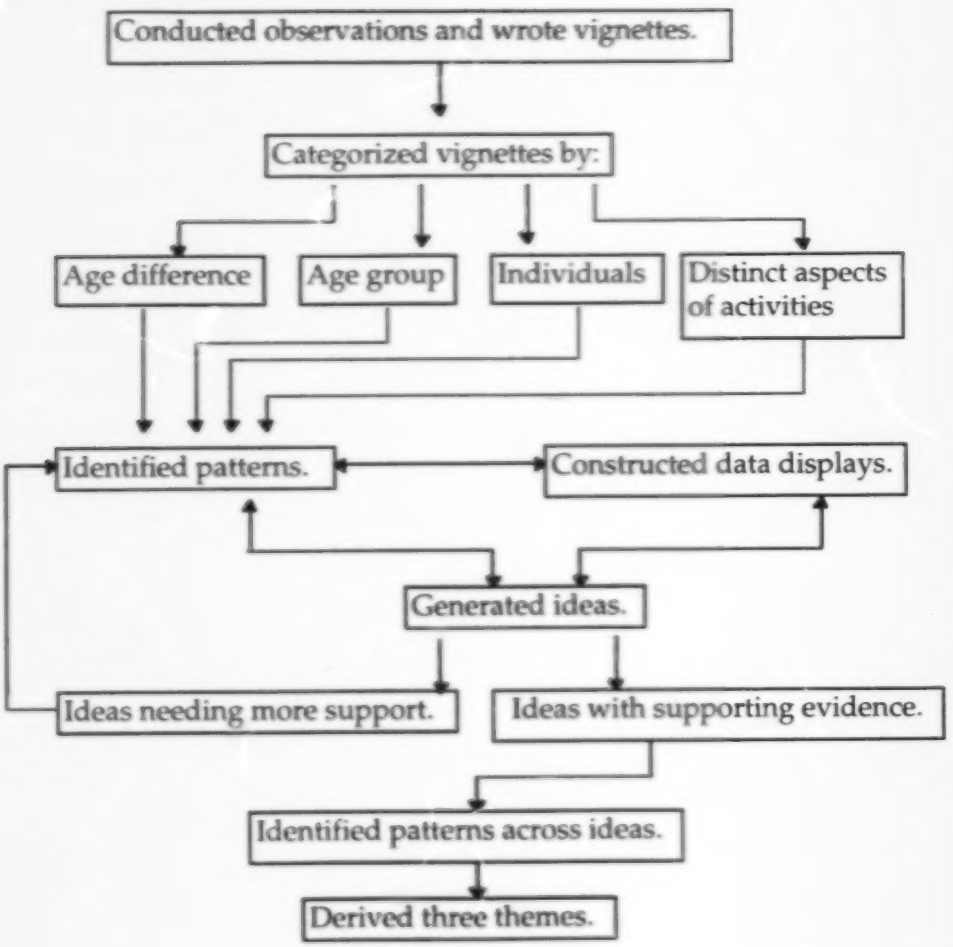
For the present study, I used the method of reactive participation (Corsaro, 1985), and observed children at SVS for 102 days over a period of three years. I collected 375 vignettes of children's freely chosen age-mixed interactions.

### Qualitative Analysis

Figure 1 shows the method used in the qualitative analysis of the data. The goal of this analysis was to extract some general ideas by looking for patterns within the data. The first step of this analysis was to organize the vignettes in an objective, meaningful, and manageable way. To that end, I first organized the vignettes by activity, clustering together all vignettes involving, for example, chess games or playground activities. Next, I further organized the activities in four ways: (a) by the age difference between the interactants, (b) by age group classifications (did the activity involve just teenagers, preteens, or both), (c) by individuals, and (d) by distinct aspects of the activity.

Next, I looked for patterns in each activity, generating ideas and creating data displays to help me look for patterns within the data. After this, I generated a written summary for each activity. The process of doing this helped me to organize the ideas and their evidence in a logical manner, and to see whether the ideas had support or not. If an idea did not have much supporting evidence, I returned to the original data to look for more evidence.

Figure 1.
Qualitative methodology




I then looked for patterns within the ideas that I had generated, and derived three themes from doing so. These themes drove the next stage of analysis. The three themes were: (a) In what ways do children use age-mixed interactions to develop skills and gain knowledge? (b) How do mixed-age interactions help children to develop a sense of responsibility for others? and (c) What might be the potential value of age-mixed friendships for both the older and younger partner?

In what ways do children use age-mixed interactions to develop skills and gain knowledge?

The first theme derived from the qualitative analysis was that children appeared to use age-mixed interactions to develop skills and gain knowledge. To explore this theme, all instances of explicit and implicit help were noted. Explicit help included al instances where children unambiguously asked for advice or gave unsolicited advice. Implicit help included all instances where older children helped younger children participate in a new activity or at a more complex level in an activity than they would be able to with age-mates or alone.

Three main findings were derived from this analysis. First, when children asked older children for help, the help was usually given. Second, when older children offered unsolicited help, the help was often rejected. Third, children modified their mutual activities to include younger ones while also making the activity challenging to themselves.

Table 1 presents a breakdown of all instances of younger children asking for help or older children giving unsolicited help. As can be seen, 26 of the 30 times that children asked older children for help, the older children gave help. This supports the finding that children provided help when younger children asked for it. Also, 7 of the 13 times that children gave unsolicited advice to younger children, that advice was rejected. Taken together, these findings suggest that children took charge of and directed the help they received from older children.

Table 1
Instances of Explicit Help in Age-Mixed Interactions

| | Younger asks for help | | Older offers help | | Younger offers help | | Older asks for help | |
|---|---|---|---|---|---|---|---|---|
| | help given | help not given | help accepted | help rejected | help given | help not given | help accepted | help rejected |
| Playing together | 9 | 1 | 4 | 0 | 0 | 0 | 4 | 0 |
| As a spectator | 2 | 3 | 0 | 5 | 0 | 3 | 0 | 5 |
| Together in a non-game activity | 15 | 0 | 2 | 2 | 0 | 0 | 2 | 2 |
| Totals | 26 | 4 | 6 | 7 | 0 | 3 | 6 | 7 |

The third finding related to this theme, that children modified their mutual activities to include younger ones while also making the activity challenging to themselves, can be divided into two related ideas; (a) that older children implicitly structure their interactions with younger ones, and (b) that older children challenge themselves while helping younger ones participate in a mutual activity. In these observations, children implicitly helped younger children by; (a) providing safety, (b) providing physical support, (c) providing help in thinking, (d) modifying the rules of the game in ways that allow younger children to participate, and (e) modifying their own behavior to give more responsibility to younger children.

It appeared that when older children played with younger, less skilled players, they modified the game not only to include younger children, but also in ways that ensured the game was still challenging and enjoyable for them. Consequently, implicit structuring of

the activity occurred not solely because older children wanted to teach the younger ones (or the younger ones wanted to be taught), but because the older children wanted to enjoy an activity in which they were engaged. Older children made the game more accessible to younger children while still challenging themselves by (a) accommodating to the younger child's level and (b) changing their goals in the game.

An example which can illustrate many of these ideas is when Ernie (age 4) was playing four-square. Whenever Ernie entered the game, he would quickly get out, as it was very difficult for him to hit a moving basketball (which is what they use to play four-square at SVS) into another player's square. However, one time when Shawn (19) was in the King square, Shawn hit the ball to Ernie in such a way that Ernie was able to catch it and then throw it into another square. Shawn helped Ernie participate in the game by modifying the rules of the game to allow Ernie to participate. One of the rules of four-square is that players are not allowed to catch or toss the ball. Shawn, when he was in the King square and permitted to make new rules, allowed Ernie to both catch and throw the ball, although he expected that other players (including himself) play by the standard rules. Further, Shawn modified his own behavior in how he hit the ball to help Ernie to participate. Shawn did not hit the ball the way he would if an older player had been in Ernie's square (in such a way as to get that person out), but hit so that a 4-year old could return it.

Shawn challenged himself in this game by changing his goal in the game. Shawn was not playing to eliminate other players, but instead his goal was to hit the ball in such a way that Ernie would be able to play. Further, Shawn modified his behavior to accommodate a younger player's level. Shawn hit the ball in such a way that Ernie could catch it and throw it. It is not an easy feat to hit a basketball soft enough, yet with enough bounce, that it will fall into the arms of a four-year-old.

## How do mixed-age interactions help children to develop a sense of responsibility for others?

The second theme derived from this analysis is that children can develop a sense of responsibility for others through their age-mixed interactions. To explore this theme, all instances of children acting responsibly or irresponsibly to each other were noted. Four main findings were derived: (a) children responded positively to younger children's requests for help, (b) children more often praised and supported than discouraged younger children, (c) children talked to each other about how to treat younger children, and (d) there were few instances of children bullying younger ones.

The first idea is supported by the data presented in Table 1 and discussed previously. Children gave help in 26 of the 30 instances when children asked for help. For the purpose of this paper, I will only discuss one further finding. An example of the finding that children talk to each other about how to treat younger children can be seen in the following vignette:

> Kelly (age 14) was reading a book to Robin (age 4) while they snuggled on the couch. Amy (age 12) asked which book it was and Kelly told her. A little while later Amy, who was trying unsuccessfully to get Kelly's attention, yelled "F**kface" to her and Kelly said, "Amy!" glancing towards Robin. Amy said "Oops, innocent ears, Fudgeface," and proceeded to talk to Kelly. Amy then read a story to Robin, who was still snuggled in Kelly's lap, when Kelly had finished.

Kelly has assumed a leadership role in reminding Amy about Amy's own role in the situation. That is, Amy (like Kelly) was an older, more experienced child and she must live

Kelly has assumed a leadership role in reminding Amy about Amy's own role in the situation. That is, Amy (like Kelly) was an older, more experienced child and she must live up to that role in front of Robin, who was younger. Kelly reminded Amy that, although she was not addressing Robin directly, part of being an older, more responsible child was that she was a role model and was therefore responsible for how her behaviors affected others. Kelly was able to take the perspective of both Robin (in what would be appropriate for her to hear) and Amy (in what might be the best way to inform Amy of her mistake in front of Robin). Amy's response in this situation demonstrated that she did in fact have an understanding of what her role was. Her comment "innocent ears," was an acknowledgment that she had violated the expectations that she be a good role model as an older child, and she quickly changed her comment to one more suitable for "innocent ears". This example suggests either that older children had come to see being a role model for how other older children treat younger children as part of their responsibility for younger children, or that the speaker felt responsible not only for his or her own behavior toward younger children, but for that of the whole community.

What might be the potential value of age-mixed friendships for both the older and younger partner?

The third theme derived from this analysis is that children develop cross-age friendships. I noted a number of children who appeared to be friends based upon my observations that they seemed to seek each other out, spend significant amounts of time with each other, and showed an emotional commitment to one another. I documented two types of cross-age friendships, those in which: (a) some children regularly associated with older or younger friends and companions, and (b) some children had a cross-age friend despite regularly associating with same-age partners.

Students Who Regularly Associated with Older or with Younger Partners

Two students from the observational data had mainly older friends and companions while one student was regularly observed spending significant amounts of time with younger children. One will be described in this paper.

Randy. Randy (age 12) was observed in 45 vignettes with 153 total partners, 53% of whom were older cross-age partners, 20% of whom were same-age partners, and 27% of whom were younger cross-age partners. In an earlier analysis on the extent of age-mixing at Sudbury Valley (Gray & Feldman, 1997), Randy was observed in the highest number of cross-age interactions of any student observed. He was observed in 9 different groups, with a total of 15 different companions, all of whom were older than he (median age difference=35 months).

Randy, who seemed both physically and socially mature for his age, excelled on his artwork (he had been complemented by older students and staff at the school) and was one of the better chess players at the school (he traveled to tournaments and had an official player rating that requires considerable skill to attain). Randy was observed playing chess on 19 different occasions, and all but once against an older player. When Randy played against his friends who had similar skills, such as Jack (5 years older), Elana (almost 5 years older), or against Ken (6 years older), an older students with whom he was friendly, Randy played very competitive games. He and Jack kept a running score of who was ahead in their competition and after one match that ended in a draw, they argued about who was

the better player. Randy admitted that Jack had won more games, but that he would catch up. Randy and Elana were just as competitive, occasionally played for money, always fought about the colors that they wanted (they both liked to play white), and, at least one time, Randy stopped playing a game with Elana because he thought an observer influenced her move (which would have enabled her to win the game). In one instance Randy commented to his friends about his games against Ken.

> A year after Ken (age 18) graduated, Randy (age 12) was sitting in the social room reminiscing with his friends about how he used to play chess with Ken. He mentioned that he just could never beat Ken, no matter how many times they played. However, the first time the next year that they sat down to play, Randy won. He admitted it felt great, because he wanted to beat Ken so bad for so long, and when he finally did it was the coolest feeling and he knew that he was a really good player.

When Randy played chess against players he was better than, he typically complained, such as when he was frustrated that Jake (14) took too long to make his moves. In six other instances, Randy played his friend Dennis (3 years older) who is not as good a chess player as Randy. Randy and Dennis never played a competitive game of chess together. While they played chess quite often, they played Speed or Zombie chess, alternative games which are played at a frenetic, fast pace, with little thought given to strategy[1].

Randy's other observed favorite activities at the school were drawing and playing Magic. Randy was involved in creating a comic book with Mark (15 months older and therefore classed as a same-age companion), who was also a talented artist. Randy and Mark were friends who spent many hours collaborating on this project. Mark also played Magic, but was very much a beginner, and Randy never played Magic with him.

Randy typically played Magic with Jerry (4 years older) and Noah (6 years older). During one game, Sylvester (4 years older), a neophyte at Magic, watched. Sylvester ended up sharing a seat with Randy and taking over his cards, and Randy directed him on what to do and say. Sylvester followed Randy's advice, elaborating on Randy's suggestion to trash-talk, making all four players laugh.

Discussion of these Friendships

Randy's choice of partners in his activities suggests that he used his older friends as a means of pushing himself to learn more and become more skilled. Randy measured himself and his ability against the skills of older children with whom he often interacted, despite the fact that both younger and same-age children were available to him as companions. Because he needed to challenge himself to develop his own skills, he played against older and slightly more skilled players. For example, Randy typically interacted competitively with his older friends only in those areas in which his older friends were better. Randy did not play Magic with Mark (15 months older and classified as same-age)

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[1] Speed chess is a more traditional chess game in which participants have a certain amount of time to move their pieces. Players punch a clock after their move, which then begins counting the time of the other player's turn. Students at SVS typically play the game in this manner, although they speed up the clock so that the entire game itself lasts under 3 minutes. Needless to say, these games are very hectic, with players moving a piece and then striking the clock (although a more proper description may be flailing at the clock) as quickly as possible, with very little time to concentrate on (and very little thought itself given to) strategy. In zombie chess, a piece that is captured does not die; it is not taken off the board. Instead, the player that captures it can place it anywhere on the board that they desire. The piece is reborn, Zombie-like, and placed on a different, often random, square.

who was older than him but not very good at that game. However, he would draw with Mark, as he was, like Randy, a talented artist. Likewise, when Randy played Dennis (3 years older) in chess, they played alternative games in which the purpose was to play at a frenetic, fun pace. He did not play traditional chess with him, because Randy was the much better player. Further support for this can be seen in Randy's relationship with Ken (6 years older). Randy commented that he struggled and struggled to beat Ken, and, once he did, he knew that he was a good chess player. It was against older players that Randy developed his skills and learned that he was, in his own words, a really good player.

Students Who Had a Special Cross-age Friendship Despite Regularly Associating with Same-Age Partners

This section will describe students who were categorized as having a "special" cross-age friendship. These students typically interacted with others their own age but also spent a substantial portion of their time with one person younger or older than them. Analysis revealed four groups of teenagers and younger students whom I observed with each other more than one third of the time. Only one will be described in this paper.

Shawn, Rex, and Jordan.

> Shawn (19) was sitting on a couch eating popcorn. Rex (5) and Jordan (6) asked him if he would look at their newly made Lego base. Shawn said he would later. They both lingered near Shawn and Rex leaned against Shawn's crossed leg. Rex opened his hand slightly and nudged Shawn's leg while Jordan asked if they could have some popcorn. Shawn gave them some. They left and a few minutes later Shawn went over to look at their Lego base.

Shawn (age 19) was observed with Rex (age 5) 8 times and Jordan (age 6) 10 times (prior to Shawn's graduation in 1993, these three were with each other in 7 of 10 vignettes of Shawn, 7 of 7 vignettes of Jordan, and 6 of 7 vignettes of Rex; in addition, in 2 of Shawn's 3 post-graduation visits he saw Jordan, and in 1 he also saw Rex). In all of these interactions, including the post-graduation visits, Shawn, Rex, and Jordan played Legos together. Shawn often put Rex and Jordan in charge of his Legos, but Shawn never asked anyone else. Once when Rex and Jordan were in charge of the Legos, Jordan found Shawn and told him that someone was stealing pieces, but they would figure out who it was. A few minutes later Jordan returned and told Shawn they had solved that problem but that Randy (age 12) would not help put the Legos away, although everyone else was. Shawn told them to tell Randy that Shawn also wanted him to clean up the Legos. Rex and Jordan did that, and Randy helped to clean up.

Shawn visited the school three times the year after he graduated, and in these visits continued to demonstrate his special relationship with them by specifically searching them out. During one of these visits, I saw Shawn enter the school and go directly to the playroom. He looked around, and, upon seeing me, asked me where Rex and Jordan were. I saw the three of them later in the day playing Legos together. During another visit, Shawn played Legos with a number of younger children who themselves often played with Rex and Jordan. These other young children asked Shawn such questions as where he bought certain Lego sets, and one even asked if he could come over to Shawn's house to play. In addition, both Shawn and Jordan commented about their friendship to others; in his thesis defense, Shawn wrote that, among his activities, he had "played LEGO's with

five and six year olds, played cars with seventeen and twenty year olds..."; in another setting Jordan told a staff member that Shawn, not Rex, was his best friend.

Discussion of this Friendship

This friendships involved children who showed an emotional commitment to one another and who actively sought each other out to spend time together rather than children who occasionally interacted for the purpose of engaging in a mutual activity. Shawn, Rex, and Jordan each appeared to find their relationship with each other to be meaningful to them. In his thesis defense, Shawn wrote about the time he spent with Rex and Jordan in much the same way he wrote about his time with his same-age friends and he enjoyed his time with them enough to seek them out the year after he graduated. While Jordan had friends at SVS his own age (including Rex), his relationship with Shawn was indeed a committed and meaningful one, and Jordan demonstrated this in his visible enjoyment of his activities with Shawn and by a staff member that Shawn was his best friend.

That these students chose to have these relationships suggests that they served some function for the individuals involved. For older children, the function of these relationships might be that they could have a committed relationship that was based in a desire to lead or nurture younger children and in which they could practice the skills needed to be parents. While older children might provide nurturance or leadership to younger children whom they did not know well, their doing so may be based in a responsibility they felt to younger children in general. In these relationships, older children showed a commitment to younger children whose company they sought and enjoyed and whose outcomes they cared about.

In one sense, having a friend so different in age than oneself can feel 'pretty cool' and special. A younger child might feel special for having been chosen by an older child as a friend, and older children might enjoy having younger ones look up to them and partners with whom they could share parts of their world. Children might also have been attracted to younger children's cuteness and spontaneity.

Shawn seemed to enjoyed being looked upon so highly by younger children (such as having Jordan say that he was Jordan's best friend), and sharing a part of himself with those who looked up to him (Shawn enjoyed building with Legos, and was often complimented on his designs by same-age peers and staff). Rex and Jordan received the satisfaction of having a "cool" older friend, as Shawn was well respected at SVS (He was elected to serve as School Meeting moderator, an important school office, that year.). Further, Rex and Jordan held an exalted place among their friends because of their relationship with Shawn. Shawn was looked up to by Rex's and Jordan's friends, but those friends knew that Shawn favored Rex and Jordan (i.e., they knew that Shawn only left them in charge of his Legos).

In addition to the possible benefits to their self-esteem, younger children might also been able to develop new skills through these friendships. For example, Shawn often placed Rex and Jordan in charge of his Legos. Rex and Jordan could then feel important and trusted by this act, and develop leadership skills through this responsibility. In addition, this relationship provided Rex and Jordan with a safe context in which to develop their skills. They both knew that Shawn would support them if they needed help, and so they could go about their tasks with confidence—they could always get Shawn to help if they have a problem. Indeed, when they did have a problem, they told Shawn, who did help them resolve it.

## Conclusion

In this section, I will discuss two of the ideas generated by this study. They are that (a) under conditions of free choice, children's learning is implicit: their explicit goal is to have fun, and (b) under conditions of free choice, children assert responsibility for younger children.

### Under Conditions of Free Choice, Children's Learning is Implicit: Their Explicit Goal is to Have Fun

When children of different ages choose to play together, the older child is typically more skilled and so is expected to win. Consequently, age-mixed games may present less competitive and less threatening situations in which children are free to experiment with their behavior. Players have more freedom to ask each other questions or give each other advice. Additionally, older children need to modify the activity to be able to play with younger children and for both to have fun. Older children challenged themselves as they structured the activity to accommodate their younger partners, as that made the activity fun for them as well.

### Under Conditions of Free Choice, Children Assert Responsibility for Younger Children

Children's sense of responsibility to younger children goes beyond direct nurturance. Children assert responsibility not just through helping younger children when they ask for it, but by implicitly helping them play games, setting examples, deciding when and when not to interfere, and confronting other children about mistreatment of younger ones. That some older children developed a committed relationship with a particular younger child suggests that the older actively chose to take responsibility for the long-term well-being of their friend.

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